

DIAGRAMS ILLUSTRATING
MEASUREMENT OF DENSITY
IN SOUTHERN PINE LUMBER



SOUTHERN PINE INSPECTION BUREAU
NEW ORLEANS, LA.

Density Rule

a. **Dense Southern Pine** shall average on either one end or the other not less than 6 annual rings per inch, and in addition, one-third or more summerwood (the darker, harder portion of the annual rings), measured over a 3-inch portion of a radial line located as described below. The contrast in color between summerwood and springwood shall be distinct. Pieces averaging less than six annual rings per inch shall be accepted as dense if averaging one-half or more summerwood.

b. The radial line shall be representative of the average growth on the cross-section. When the radial line specified is not representative, it shall be shifted sufficiently to present a fair average, but the distance from the pith to the beginning of the 3" portion of the line in boxed pith pieces shall not be changed. In case of disagreement, two radial lines shall be chosen, and the number of rings per inch and percentage of summerwood shall be the average determined on these lines.

c. In boxed pith pieces, the measurement shall be made over the third, fourth, and fifth inches from the pith along the radial line. (**Figures 1, 2 and 3.**) In pieces containing the pith, but not a 5-inch radial

line, which are less than 2 by 8 inches in section or less than 8 inches in width, that do not show over 16 square inches on the cross-section, the inspection shall apply to the second inch from the pith. (**Figures 4 and 5.**) In larger pieces that do not show a 5-inch radial line, the inspection shall apply to the 3 inches farthest from the pith. (**Figures 6 and 7.**)

d. In cases where pieces do not contain the pith and it is impossible to locate it with any degree of accuracy, the same inspection shall be made over 3 inches on an approximate radial line beginning at the edge nearest the pith in pieces over 3 inches in thickness, (**Figures 8 and 9**) and on the second inch nearest the pith in pieces 3 inches or less in thickness. (**Figures 10 and 11.**)

e. In inspection for density, reasonable variation of opinion between inspectors must be recognized. In reinspection of a particular lot of lumber for density, for every three pieces accepted as having one-third or more summerwood, one of the remaining pieces shall be accepted if agreed upon as having between 30 and 33- $\frac{1}{3}$ per cent summerwood.

BASIS OF MEASUREMENT

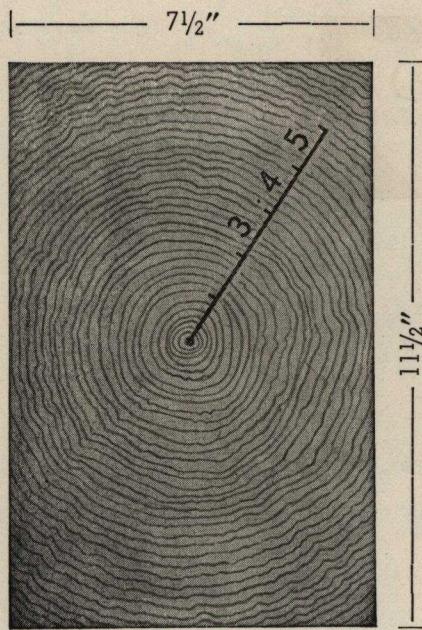


Fig. 1

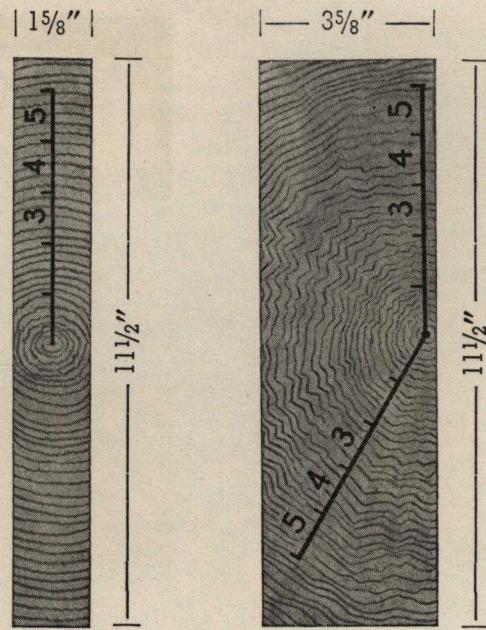


Fig. 2

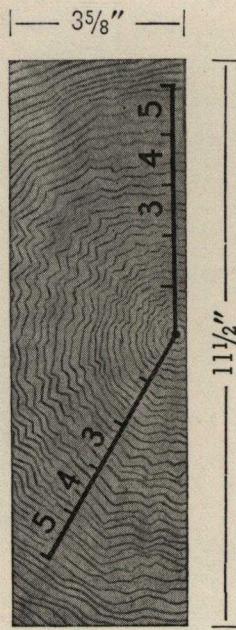


Fig. 3

Illustrations of pieces containing pith with 5" radial line present. As provided in paragraph 403c, the measurement in such pieces is to be "over the third, fourth and fifth inches from the pith along the radial line." If alternate 5-inch radial lines are available, the measurement is made over the third, fourth and fifth inches from the pith along the particular radial line that presents a fair average of the growth on the cross-section.

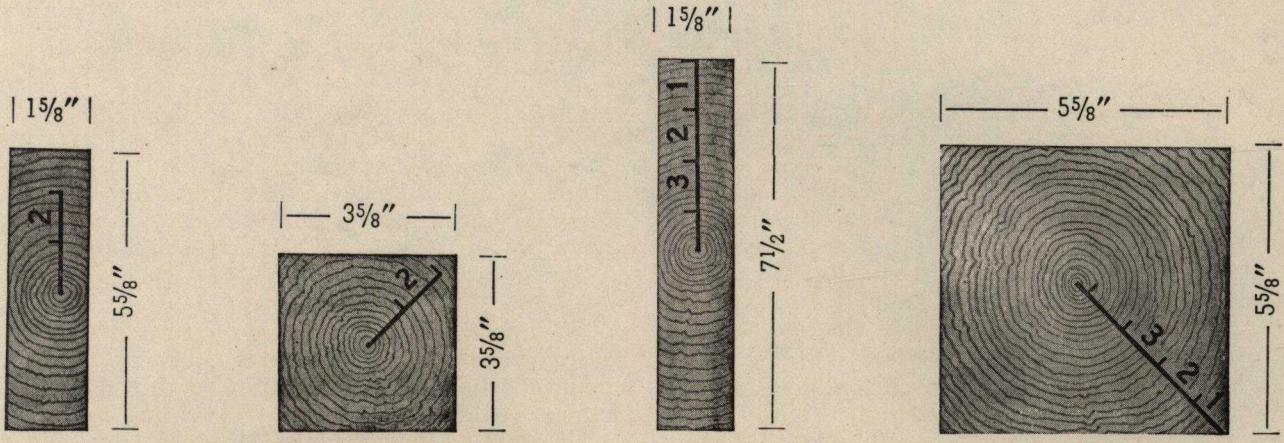


Fig. 4

Fig. 5

Fig. 6

Fig. 7

Illustrations of pieces containing pith but lacking a 5-inch radial line. **Figures 4 and 5** are either less than 2x8 in cross-section or do not show over 16 square inches on the cross-section. In such pieces the measurement is made on the second inch from the pith as provided in paragraph 403c. **Figures 6 and 7** are either as much as 2x8 in cross-section or show over 16 square inches on the cross-section. In such pieces the measurement is made on the three inches farthest from the pith as also provided in paragraph 403c. As in the case of pieces containing the pith and a 5-inch radial line, the measurement for pieces having less than a 5-inch radial line may be shifted to secure a fair average of the growth on the cross-section, provided such measurement is on the second inch from the pith or on the three inches farthest from the pith, as the case may be.

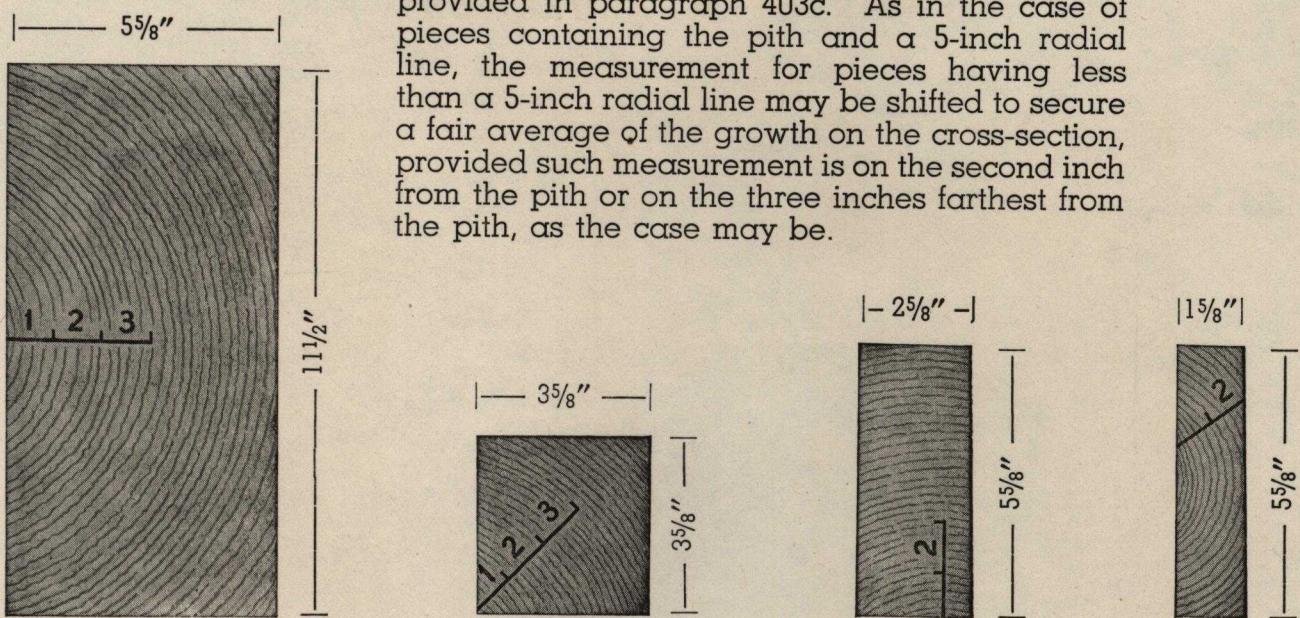


Fig. 8

Fig. 9

Fig. 10

Fig. 11

Illustrations of pieces not containing the pith. **Figures 8 and 9** are over 3" thick, and as provided in paragraph 403d, the measurement is "over 3 inches on an approximate radial line beginning at the edge nearest the pith." **Figures 10 and 11** are 3" or less in thickness and the measurement is made "on the second inch nearest the pith." In pieces not containing the pith, the radial line is fixed by the requirement that the measurement must begin at the edge nearest the pith, and the point of measurement cannot be shifted.

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